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UMMER IGH SCHOOL PPRENTICESHIP ESEARCH ROGRAM

SHARP

Science

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EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

The summer of 1997 will not only be noted by NASA for the mission to Mars by the Pathfinder but also for the 179 brilliant apprentices that participated in the SHARP Program. Apprentice participation increased 17% over last year's total of 153 participants. As indicated by the End-of-the-Program Evaluations, 96% of the programs' participants rated the summer experience from very good to excellent.

The SHARP Management Team began the year by meeting in Cocoa Beach, Florida for the annual SHARP Planning Conference. Participants strengthened their Education Division Computer Aided Tracking System (EDCATS) skills, toured the world-renowned Kennedy Space Center, and took a journey into space during the Alien Encounter Exercise. The participants returned to their Centers with the same goals and objectives in mind. The 1997 SHARP Program goals were:

Goal I. Utilize NASA's mission, unique facilities and specialized workforce to provide exposure, education, and enrichment experiences to expand participants' career horizons and inspire excellence in formal education and lifelong learning.

Goal II. Develop and implement innovative education reform initiatives which support NASA's Education Strategic Plan and national education goals.

Goal III. Utilize established statistical indicators to measure the effectiveness of SHARP's program goals.

Goal IV. Explore new recruiting methods which target the student population for which SHARP was specifically designed.

Goal V. Increase the number of participants in the program.

All of the SHARP Coordinators reported that the goals and objectives for the overall program as well as their individual program goals were achieved. Some of the goals and objectives for the Centers were 1) To increase the students' awareness of science, mathematics, engineering, and computer technology, 2) To provide students with the opportunity to broaden their career objectives, and 3) To expose students to a variety of enrichment activities. Most of the Center goals and objectives were consistent with the overall program goals.

Modern Technology Systems, Inc., was able to meet the SHARP Apprentices, Coordinators and Mentors during their site visits to Stennis Space Center, Ames Research Center and Dryden Flight Research Center. All three Centers had very efficient programs and adhered to SHARP's general guidelines and procedures. MTSI was able to meet the apprentices from the other Centers via satellite in July during the SHARP Video-Teleconference(ViTS). The ViTS offered the apprentices and the NASA and SHARP Coordinators the opportunity to introduce themselves. The apprentices from each Center presented topical "Cutting Edge Projects".

Some of the accomplishments for the 1997 SHARP Program year included: MTSI hiring apprentices from four of the nine NASA Centers, the full utilization of the EDCATS by apprentices and NASA/SHARP Coordinators, the distribution of the SHARP Apprentice College and Scholarship Directory, a reunion with former apprentices from Langley Research Center and the development of a SHARP Recruitment Poster. MTSI developed another exciting newsletter containing graphics and articles submitted by the apprentices and the SHARP Management Team.

1997 SHARP OVERVIEW

I. 1997 SHARP OVERVIEW

End-of-the-Program Evaluations

The End-of-the-Program Evaluation is one of the tools used by NASA Headquarters and MTSI to evaluate the SHARP Program. Each of the program participants is required to assess the program as a whole and each individual component of the program. These evaluations provide valuable input from participants that MTSI does not have the opportunity to meet and discuss their program experiences. The evaluators are given an adequate amount of space to express additional comments. These comments are essential to MTSI and NASA because they provide feedback that can enhance the program.

During the past two years there has been an active effort to implement the Education Computer Aided Tracking System (EDCATS). EDCATS is NASA's on-line evaluation system which is used to measure the success of NASA's Educational Programs. In the past, MTSI would use the End-of-the-Program Evaluations for Mentors, SHARP Coordinators, NASA Staff and Apprentices. However, many of the questions on the End-of-the-Program Evaluations were also contained in EDCATS which the apprentices were required to complete this summer. Therefore, MTSI did not have the apprentices complete End-of-the-Program Evaluation forms. MTSI compiled the information from the evaluation forms and developed a summary from the responses of the SHARP Coordinators, Mentors, and NASA Staff. A separate summary was compiled from the information from the EDCATS Student Data Feedback Forms.

End-of-the-Program Evaluation Summary

The total number of respondents for the 1997 End-of-the-Program Evaluations was 169, which consisted of 8 NASA Program Staff, 9 SHARP Coordinators, and 152 Mentors. As indicated below, 96 % of the responses to the evaluations were very good to excellent.

EX=Excellent VG=Very Good AV=Average BA=Below Average PR=Poor

1. **What overall rating would you give the SHARP Program?**

Mentors – 152

EX 55% VG 41% AV 3% BA 1% PR

SHARP Coordinators– 9

EX 89% VG 11% AV BA PR

NASA Program Staff – 8

EX 87% VG 13% AV BA PR

2. **How would you rate the overall effectiveness of your student apprentices?**

Mentors – 152

EX 58% VG 32% AV 10% BA less than 1% PR

SHARP Coordinators– 9

EX 44.5% VG 44.5% AV 11% BA PR

NASA Program Staff – 8

EX 37% VG 63% AV BA PR

3. **How would you rate the overall effectiveness of Mentors?**

SHARP Coordinators - 9

EX 44% VG 56% AV BA PR

NASA Program Staff – 8

EX 38% VG 62% AV BA PR

4. **How would you rate the overall effectiveness of the SHARP Coordinator?**

Mentors – 152

EX 57% VG 32% AV 11% BA less than 1% PR

NASA Program Staff – 8

EX 75% VG 25% AV BA PR

5. **Did you meet your program goals and objectives?**

SHARP Coordinators – 9

Yes 78% Somewhat 22% Not at all

NASA Program Staff – 8

Yes 100% Somewhat Not at all

EDCATS Student Data Feedback Form

The total number of respondents for the 1997 ECATS Student Data Feedback Form was 171.

SA=Strongly Agree A=Agree N=Neutral D=Disagree SD=Strongly Disagree

EX= Excellent G=Good AV=Average P=Poor VP=Very Poor

1. This Program was a valuable experience.

SA 88% A 11% N 1% D SD D

2. How would your rate the...

Mentors (Only 132 apprentices answered this question)

EX 77% G 17% AV 5% P 1% VP

SHARP Coordinators

EX 76% G 19% AV 4% P 1% VP

3. What would you tell someone who asked you about applying to this program?

EX 82% G 15% AV 3% P VP

YEAR END REVIEW

II. YEAR END REVIEW OF SHARP PROGRAM ACTIVITIES

SHARP Planning Conference

On April 10 – 12, 1997, the annual SHARP Planning Conference was conducted in Cocoa Beach, Florida. The two-day conference was held at the Howard Johnson's Plaza Hotel and hosted by Kennedy Space Center. The Planning Conference allows the members of the SHARP Management Team to come together to assess the previous year and plan for the upcoming year. MTSI, in conjunction with the SHARP Contracting Officer's Technical Representative, Deborah Glasco, developed the conference agenda. According to the Conference Evaluation Surveys, all of the conference sessions were rated "Excellent to Good."

Since there was not a planning conference last year, due to the continuing resolution that affected all government agencies, the meeting began with a review of the previous program year. Following the review, Ms. Glasco, discussed NASA's 1997 SHARP Agenda, which included FTE/Apprentice Status Changes, Affirmative Action Impact on SHARP, and EDCATS.

Ms. Glasco explained to the participants that agency-wide downsizing and reduction of Full Time Equivalents (FTE's) have forced some of the Centers to reduce their number of SHARP Apprentices. For Centers affected by the FTE situation, it was decided that Modern Technology Systems, Inc., (MTSI) would pay the apprentices' salaries for the 1997 summer program. Ms. Glasco informed the group that Affirmative Action is not entirely a closed issue. Last year, NASA responded to an action from the Justice

Department as a result of the Adrand case to evaluate SHARP. The Adrand Case (Adrand Construction Company) protested the selection of a small business, minority company for a contract award. As a result of this case, the Department of Justice took a broad based approach of reviewing all government-wide contracts/grants, educational and employment programs that are targeted for minority groups. Ms. Glasco stated that the General Counsel recommended removing the word "minority" from SHARP literature and replacing it with the word "underrepresented".

Ms. Glasco also discussed the importance of EDCATS which is NASA's on-line database system designed to evaluate and monitor the success of SHARP and NASA's other education programs. Ms. Glasco stated that EDCATS is not only a statutory requirement, but now a budgetary requirement. The data collected is essential to establishing and defending NASA's education program dollars. The information provided by EDCATS is used to demonstrate the success of the program and how SHARP is making an impact on the educational community.

Following Ms. Glasco's presentation the SHARP Management Team participated in a thorough workshop on EDCATS conducted by MTSI's Database Specialist, Richard Roach. An EDCATS workshop was held in 1996 for NASA Coordinators and EDCATS manuals were distributed, however, many of the NASA and SHARP Coordinators were still not familiar with the system. Therefore, MTSI and NASA Headquarters decided to conduct this session during the planning conference to review the procedures for accessing the new system. Mr. Roach provided the participants with step-by-step

instructions on how to utilize the system. By September 1, 1997 MTSI received all of the EDCATS information from both the NASA and SHARP Coordinators. Many of the Management Team members commented that the EDCATS demonstration at the planning conference enabled them to fully understand how to utilize the system.

The SHARP Management Team toured Kennedy Space Center on the second day of the conference and was given a "behind the scenes" tour of some of the facilities. The group visited the Vehicle Assembly Building (VAB), the Operations and Check-Out Building (O&C), and the Orbiter Processing Facility (OPF). After the tour the participants returned to the hotel for a group luncheon. The guest speaker at the luncheon was Dr. Therman Evans. Dr. Evans, founder of Whole Life Associates, Inc., is the former vice president and corporate medical director of the CIGNA Corporation. Dr. Evans has served on the clinical faculty of Howard University and, as a member of the Commission on the Continued Vitality of Cheyney University of Pennsylvania, has been a visiting Regent's Scholar-Lecturer at the University of California, San Diego, and is a Fellow of the Philadelphia College of Physicians. Dr. Evans dynamic speech was definitely rated as one of the highlights of the Planning Conference. Dr. Evans shared his experience of becoming a doctor and eloquently expressed his admiration for teachers. Dr. Evans commended teachers for their patience and dedication to their work. Since many of the SHARP Coordinators are educators, they found his speech to be very enlightening and inspirational. Following the luncheon, the NASA and SHARP Coordinators separated for individual meetings. The NASA personnel convened to discuss NASA issues related to

program implementation and the MTSI staff met with the SHARP Coordinators to discuss administrative issues.

During the contractor's break-out session, MTSI reviewed the SHARP deliverables and procedures for hiring contractor apprentices. All of the personnel forms that the SHARP Coordinators would distribute to the contractor apprentices were also reviewed. When the apprentices were actually hired this past summer it was an easy process. Reviewing the procedures during the conference ensured a seamless transition for MTSI and the apprentices.

On the third day of the conference, the entire group participated in a skills development simulation exercise entitled "Alien Encounter". The objective of the exercise was to strengthen communication skills, improve the ability to make sound, rational decisions, and to build interaction skills. The group envisioned themselves as a space shuttle crew that has just completed a mission to repair the Hubble Space Telescope. After the repair, the crew encounters an unexpected visitor. The crew must then decide whether to try to communicate with the visitor or return to earth. This exercise was facilitated by Ms. Darlene Puckett of the Florida Training Systems.

The Center Presentations followed the Alien Encounter exercise. The Center Presentations allow the NASA and/or SHARP Coordinators the opportunity to share unique and innovative aspects of their SHARP Program experience. Each Center presented interesting activities or unique recruiting methods that they incorporate in their

program. Marshall Space Flight Center (MSFC) shared information about the annual breakfast workshop that they conduct with mathematics and science department heads from local area high schools. This event officially begins the recruiting season in Huntsville, Alabama. During the workshop, the MSFC staff discuss the upcoming summer program and provide a tour of the MSFC facility. The high school personnel look forward to attending this workshop each year to learn about the upcoming program. After hearing about MSFC's breakfast workshop, the Kennedy Space Center's (KSC) SHARP staff decided to conduct a similar workshop. In October 1997, the KSC Staff hosted a breakfast workshop with high school counselors in the Cocoa Beach area. The KSC staff reported that they had a good turnout and the counselors enjoyed learning information about SHARP and they were eager to assist in recruiting for the upcoming year.

In addition to the Center presentations, the SHARP Coordinator for Stennis Space Center, Louvinia Wallace, reported on the National Institute for Science Education (NISE) Conference she attended in Washington, DC in February 1997. The forum this year covered Research on Systemic Reform: "What Have We Learned? What Do We Need to Know". The Conference emphasized the importance of establishing a curriculum with each state that encompasses a positive impact that will ensure students acquire quality education.

After the Center Presentations, the group reviewed the revisions for the 1997 Guidelines and offered their recommendations. These changes for the 1997 Guidelines had been forwarded to the participants prior to the conference. The revisions to the Guidelines

included: incorporating information on the contractor apprentice status change, adding EDCATS as a program requirement, and administrative updates.

The final session of the conference was the Open Forum. This session was recommended by one of the NASA Coordinators to allow the SHARP Management Team the opportunity to discuss issues that were not included in the conference agenda. The primary topic that the team wanted to discuss was the format for the Video Teleconference (ViTS). The ViTS is held each year during the summer and allows the apprentices at each Center to interact via satellite. Previously, the format included a 90 minute session with a guest speaker and presentations from each Center.

The Management Team felt it was time to change the format of the ViTS. During this discussion the group decided not to have a guest speaker in 1997. This year's format would consist of theme oriented Center Presentations. The ViTS was held on July 24, 1997 with the SHARP Management Team and the apprentices. The theme was "On the Cutting Edge of Space Technology". The apprentices at each Center introduced themselves and the title of their project. Two apprentices from each Center were chosen to present "Cutting Edge" projects that are being conducted at their Center. The format was a great success because each Center had adequate time to present.

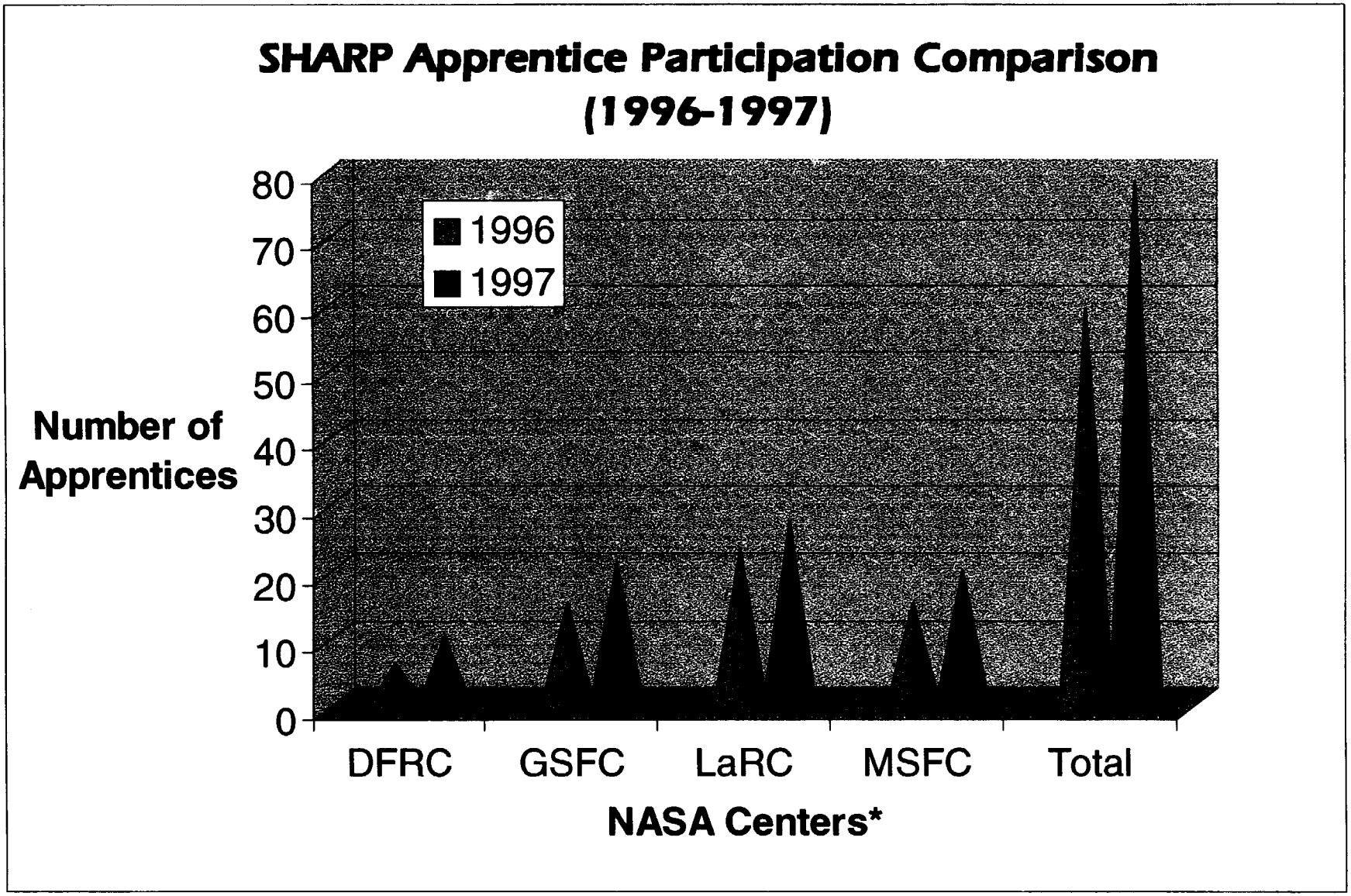
The coordinators and apprentices were very satisfied with the outcome of the ViTS. At the end of the Open Forum the group unanimously decided that the 1998 Planning Conference will be hosted by Stennis Space Center in Mississippi.

The 1997 Planning Conference was very productive. The participants accomplished their goal of preparing for the upcoming year and enjoyed the presence and camaraderie of their colleagues.

Contractor Apprentices

For the 1997 program year, NASA Headquarters offered the NASA Centers the option to change the status of the SHARP Apprentices from civil service employees to contractor employees. This status change was intended to increase apprentice participation rates at Centers that had been affected by the FTE reductions.

During the summer of 1997, four of the nine NASA Centers elected to hire their apprentices through MTSI. The Centers that employed contractor apprentices were Dryden Flight Research Center, Goddard Space Flight Center, Langley Research Center, and Marshall Space Flight Center (See Attachment I). The apprentices at Kennedy Space Center were hired through the University of Florida. The University of Florida managed all of KSC's student programs. The SHARP Apprentice Information Forms were mailed to the students in January of 1997 and students were selected by April. The students attended orientation during May and were given the personnel forms needed for employment with MTSI . Examples of the forms in the student packages included MTSI Employment Applications, Employee Withholding Allowance Certificates, W-4's, Immigration and Naturalization Forms (I-9), Time Sheet Procedures and Corporate Policy Statements (i.e. Affirmative Action and Sexual Harassment Policies). The SHARP Coordinators collected this information from the apprentices on the first day of



* These NASA Centers had Contractor Apprentices in 1997.

Attachment I

their programs and forwarded the information to MTSI to maintain in their personnel files.

The four Centers that hired contractor apprentices were able to increase their number of participants. The SHARP Coordinators did not experience any difficulties executing the program as compared to previous years. The SHARP Coordinators stated that there was more involvement on their part in terms of administrative work. Since these apprentices were not civil service employees, the SHARP Coordinators were responsible for overseeing their timesheets and distributing the apprentices' payroll.

Administrative Modifications

In April 1997, MTSI hired Ms. Susan White as the new SHARP Coordinator for Johnson Space Center. Ms. White is the Mathematics Department Chairman at Pearland High School in Pearland, Texas. The previous SHARP Coordinator, Mr. Howard Bruce, was terminated because he was unable to provide adequate support to the NASA Coordinator, Ms. Nancy Garrick, during pre-and-post program periods. Ms. Garrick expressed to MTSI that during this crucial period she needed additional assistance from the SHARP Coordinator. Since Mr. Bruce did not live near the NASA Center, it was difficult for him to accommodate Ms. Garrick during this period. According to Ms. Garrick's SHARP Coordinator Evaluation Form, Ms. White has performed satisfactorily in this position. She is very efficient in planning enrichment activities and meeting required deadlines. Ms. White also works well with the apprentices and the JSC staff.

In addition, two new Administrative Assistants joined the MTSI Staff at the following

Centers: Ames Research Center – Ms. Jocelyn DeLeon
Langley Research Center – Ms. Lynette Haynes.

SHARP
SUMMER SESSION

III. SHARP SUMMER SESSIONS

NASA Center Site Visits

This year the MTSI staff members conducted site visits at Stennis Space Center (SSC), Ames Research Center (ARC) and Dryden Flight Research Center (DFRC). The site visits allow MTSI staff to evaluate methods used to facilitate the summer programs, discuss program implementation, and identify center needs.

The SHARP Program at **Stennis Space Center** is supported by the Human Resources Division. The NASA Coordinator is MaryEllen Schaefer and the SHARP Coordinator is Louvinia Wallace. This year, SSC had seven apprentices.

Although each Center conforms to the standard operating guidelines of the SHARP Program, each Center adds their own individual practices to enhance the apprentices summer experience. Stennis Space Center utilizes several unique aspects in their student programs. To create a close-knit environment, SSC encourages all of the students from its summer programs to participate in joint activities to maximize their resources and allow the students to interact. All participants of the SSC student programs attend the orientation session and the final closing ceremonies together. However, the SHARP apprentices also participate in a private closing ceremony where they give their oral presentations to the SSC management staff.

Another unique feature of SSC is the Self-Paced Learning Center. The Self-Paced Learning Center allows all Stennis employees and contractor personnel access to

software tutorials, computer programs, and the Internet. Ms. Wallace mentioned that several of the SHARP apprentices have utilized this lab.

In addition to administering the required program activities, Ms. Wallace and Ms. Schaefer incorporate community outreach activities into their program. The SHARP apprentices meet with students from the Louisiana Engineering Advancement Program (LEAP) and the Treme Culture Enrichment Program (TCEP). The LEAP students are junior high school students who have excelled in mathematics and science from various public schools throughout the New Orleans area and the TCEP students range from elementary to high school. The SHARP apprentices share their engineering experiences with the LEAP and TCEP students to further peak their interest in mathematics, engineering, science, and technology.

The SHARP Program at **Dryden Flight Research Center** resides in the Public Affairs Division. The NASA Coordinator is Ron Ray and the SHARP Coordinator is Roberto Garza. Mr. Garza has been with the Program for sixteen years. Mr. Garza informed MTSI staff that during this past summer, the SHARP Program was transferred from the Human Resources to the Public Affairs Commercialization of Technology and Education (PACE) Office. While touring the Center, the MTSI staff had the opportunity to meet the Director of PACE, Mr. Lee Duke. Mr. Duke informed the MTSI staff that he had served as a mentor for the program in the past and SHARP was an excellent program.

Dryden Flight Research Center was one of the Centers to hire their apprentices as contractor apprentices. Mr. Garza stated that he was able to hire the additional apprentices because the apprentices did not have to compete against FTEs. Mr. Garza also stated that he had a good group of apprentices this year and he credits it to the student interviews that he has conducted over the past two years. Mr. Garza further stated that the interview sessions help him to select outstanding students because it allows him to observe the students first hand. The mentors and apprentices at DFRC seem very committed to the program. Mr. Garza expressed that he would like to hire his apprentices as contractor employees again next year and possibly increase his student participant rate beyond ten.

The SHARP Program at **Ames Research Center** currently resides in the Human Resources Development Branch. The NASA Coordinator is Patricia Powell and the SHARP Coordinator is Maricela Plata Varma. This is Ms. Varma's second year with SHARP. Ms. Powell has been with the SHARP Program for 17 years. Unfortunately, this is Ms. Powell's final year as a NASA Coordinator for the SHARP Program. The ARC SHARP Program will be moving to the External Affairs Division next year and Ms. Powell will remain in the Human Resources Division. Ms. Powell and Ms. Varma arranged for the MTSI staff to meet the prospective NASA Coordinator for next year, Mr. Geoffrey Lee, of the External Affairs Office. The group provided Mr. Lee with background information on SHARP and the personnel that support the program. Ms. Powell and Ms. Varma provided him with an overview of ARC's recruitment and

selection procedures for apprentices and mentors. Mr. Lee stated that his office is looking forward to working with the SHARP Program.

While visiting ARC, three of the apprentices gave wonderful presentations to the MTSI staff about their summer projects and their career goals. The apprentices, Vito Aguayo, Chris Bareng, and Aden Allen worked in the Science Payloads Operation Branch and assisted in making ground storage equipment for the astronauts. The three apprentices stated that they thoroughly enjoyed working in this division and were elated that the astronauts would actually use the supplies they created. They also gained experience using the mechanical drawing software called Automatic Computer Aided Design (AutoCAD) and creating spreadsheets from the AutoCAD sketches. The MTSI staff also visited the Psychophysiological Research Lab where they met SHARP Mentor, Dr. Patricia Cowings. Dr. Cowings and her two apprentices were preparing to conduct an interesting experiment on motion sickness. The apprentices were preparing a volunteer to undergo a series of tests to detect the level at which motion sickness would occur.

In addition to transferring to another division next year, the SHARP Program at ARC will undergo another significant change by hiring their apprentices as contractor employees.

The site visits this year were both interesting and informative. The apprentices that we met seemed to be very mature and enthusiastic. Visiting the NASA Centers and meeting the apprentices and mentors is definitely one of the major highlights of the summer for the MTSI staff.

ViTS

The annual SHARP Video-Teleconference (ViTS) was conducted on July 24, 1997. The ViTS is conducted with all of the SHARP apprentices from the nine NASA Centers and the SHARP Management Team. The ViTS allows the apprentices from the various centers to interact with one another and learn about each center's primary mission in NASA's space program. This year's ViTS format was different from the previous years. During the planning conference, the participants decided not to have a guest speaker and have each center present "Cutting Edge" projects. This new format gave each Center 15 minutes to introduce the coordinators and apprentices and feature a cutting edge project. One of the highlights of the 1997 ViTS was the participation of the two apprentices from the IV&V Facility. IV&V is a small facility located in West Virginia and is a division of Ames Research Center. The ViTS was a success and each of the Centers' presentations remained within the allotted time slot. The SHARP Management Team will decide at next year's planning conference whether to maintain this new format.

1997 ACCOMPLISHMENTS

IV. 1997 ACCOMPLISHMENTS

One of MTSI 's primary goals in managing the SHARP Program is to continue to bring a higher level of performance to the Program by incorporating new and innovative methods of assisting in the personal development of the apprentices and the SHARP Management Team. The following is a list of tasks that were completed by the SHARP Management Team.

MTSI 's Accomplishments and Highlights

Women in Space – MTSI assisted NASA Headquarters with preparing a report on successful women that participated in NASA sponsored programs. MTSI utilized the SHARP Participant Database System (PDBS) to identify former apprentices and contacted the SHARP Coordinators to assist MTSI with locating the women. MTSI provided NASA with seven biographies on females apprentices who majored in the Mathematics, Engineering, Science or Technology (MEST) fields and who now have careers in these areas. The current positions of these women are: Systems Analyst, Mechanical Engineer, Chemical Engineer, Attorney Advisor for the Office of Chief Council at Marshall Space Flight Center, Assistant Control Systems Engineer, Electrical Engineer (2).

1996 SHARP Profile - MTSI also used the PDBS to compile statistical information on the SHARP Program and its participants in order to develop a two-page Fact Sheet for NASA Headquarters. The fact sheet highlighted the outcome of the program by illustrating the number of apprentices who plan to major in or have careers in the MEST fields. The fact sheet also included valuable feedback from the program participants.

Scholarship Directory – MTSI distributed the third edition of the SHARP Apprentice College Scholarship and Financial Aid Guide to the 1997 apprentices. The guide was created to provide the SHARP apprentices with detailed information on financial aid, scholarships, and college admissions requirements. Each year coordinators, parents and apprentices request a copies of the document. This year some new scholarship information was added along with a listing of web sites that provide information about specific colleges, scholarships, and financial aid.

SHARP Mentor's Guide – MTSI updated the SHARP Mentor's Guide. This document contains information on the history, goals, and objectives of the SHARP Program as well

as the roles and responsibilities of each participant in the program. The document was forwarded to the coordinators for review. Once the document was completed the coordinators were asked to add any center specific information prior to disseminating to their mentors.

SHARP Newsletter – MTSI published and distributed the annual SHARP Newsletter to the SHARP Management Team and apprentices. This year's publication consisted of twelve pages of fascinating articles and graphics contributed by the apprentices, mentors and coordinators.

SHARP Recruitment – MTSI is in the process of revising the SHARP Recruitment Video that was developed by the former contractor. MTSI will revise some of the script and use updated footage from the summer program next year. MTSI is also in the process of developing a SHARP recruitment poster which can be posted in high schools, libraries, and community centers. The poster will briefly describe the program, the eligibility requirements, and the contact person at each Center. Since the poster was being finalized, MTSI designed a flyer to distributed to the SHARP Coordinators in their recruitment package for this year. The flyer is a smaller version of the poster and can be used to distribute to schools with the Information Kits. All of these activities are alternative methods for recruiting more students into the program.

Center Accomplishments and Highlights

The following NASA Centers reported these accomplishments in their Final Reports.

Ames Research Center- The apprentices participated in a workshop titled Youth Education and Leadership Program (YELP) and College Information Workshop. YELP is an interactive program with an intense process for personal development. YELP was designed for young adults to provide them with skills that will enable them to be more successful in their academic and personal endeavors. The College Information Activity prepared apprentices for applying to college by reviewing the application process, financial aid information and testing processes.

Dryden Flight Research Center – DFRC elected to hire the apprentices as contractor employees for 1997. This change enabled Dryden to increase the number of participants from 6 apprentices in 1996 to 10 apprentices in 1997. This change also resulted in an increase in permanent FTE slots for Dryden personnel.

Goddard Space Flight Center

A. Facilitated the Toastmaster Youth Leadership - a workshop to prepare apprentices for public speaking.
B. Conducted a Mentor Tribute - a luncheon to honor the mentors for their dedication, time and effort.

C. Conducted Computer Technology Expo – an annual event that allows apprentices to witness new advances in technology from computer vendors.

Johnson Space Center – The main accomplishment of the SHARP apprentices in 1997 was the increased exposure to technology. Several technologies were offered to the apprentices for exploration such as electronic mail, internet exploration of scholarship and college information, and video-teleconference with other NASA Centers. In addition, the apprentices made contact with several astronauts in space which enlightened their appreciation of the space program. One of the highlights of the Program was the Technical Presentation Class provided by NASA for the SHARP apprentices. The skills they acquired during this class were evident in their technical writing and presentations. During the student presentations, students expressed favorably the impact that the 1997 SHARP Program had made on their lives.

Kennedy Space Center – The recruitment of two new schools that had never participated in the SHARP Program was a major plus. KSC made several contacts with these schools during the year to ensure that applications were distributed to these students. Two major highlights this summer were 1) a trip to the University of Florida and 2) a personal tour of the crew quarters given by the Center Director. The trip to the University of Florida helped the apprentices get a feel for a large university setting.

Langley Research Center

A. Conducted a SHARP Reunion for former apprentices. Over 140 apprentices attended the reunion. More than half of those apprentices are pursuing careers in the MEST fields.
B. The number of apprentices increased from last year's total of 23 to 27.
C. Presented the seventh annual "Career Awareness Program" with representatives from twenty universities, providing apprentices with information necessary for college admission and financial aid packages.

Lewis Research Center

A. Hired 30 apprentices this year which was an increase of five more apprentices than in 1996.
B. LeRC combined all high school student programs. Apprentices participated in joint activities except for oral presentations and MEST workshops.

Marshall Space Flight Center - The 1997 apprentices were introduced to Toastmaster International. The apprentices participated in a twelve hour mini workshop of Toastmaster speaking skills. They were provided with a Toastmaster training manual and were awarded a certificate during the closing luncheon by the president of the local chapter.

Stennis Space Center – Each year the major accomplishments of the program are made by the apprentices who after only seven weeks become familiar with a professional workplace, learn the technical aspects of their job assignment in order to complete the program requirements. Some of the highlights of the program included:

- Site Visit by MTSI program staff
- Hosting of the 25 youths, ages 6-17, from the Treme Culture Enrichment Program summer camp
- A visit with SHARP Plus from Southern University at Baton Rouge
- The presentation to the Summer Scholars of the University of New Orleans' Louisiana Engineering Advancement Program (LEAP)

ISSUES/CONCERNS

V. PROGRAM ISSUES/CONCERNS AND STEPS FOR RESOLUTION

This section of the Final Report is instrumental to program planning and implementation. Each Center delineates difficulties that were encountered during the past year and recommends solutions for program enhancement. Many of the issues or concerns can be resolved internally on a Center level. However, some issues are complex and can only be rectified with the assistance of NASA Headquarters. The coordinators also often consult with their peers at other NASA Centers to explore new ideas and approaches to handling certain situations. After reviewing this section, if several Centers are experiencing a common problem, then that would indicate that this subject should be discussed at the Planning Conference.

One particular issue that three of the Centers experienced this year was an attendance problem. Some apprentices wanted to take several days off for non-emergency situations. Two apprentices at Goddard Space Flight Center were terminated for not participating for the entire eight weeks. The SHARP Apprentice Information Form (standard form developed by MTSI to collect information on students interested in participating in the program) contains a section for the parents to sign notifying them that their child would be terminated from the program if they are unable to participate for the entire duration of the program. For the 1998 recruiting season, MTSI requested that all NASA Centers include a similar paragraph in their SHARP Applications to help alleviate this problem in the future. In addition, the eligibility section in the 1998 SHARP

Program brochure was reworded as follows: "students must be available on a full-time basis (40 hours per week) for the entire duration of the Program."

Following are the individual Centers' Issues/ Concerns and Steps for Resolution.

Ames Research Center

Office Space – The lack of office space for the SHARP Coordinator and the SHARP Administrative Assistant was one of the problems. Space and office equipment, including the telephone and desk were shared with the NASA Coordinator. The SHARP Coordinator found this arrangement frustrating and not very effective.

Resolution – The SHARP Program at Ames will be moving to another division next year. Hopefully there will be more space available to accommodate her and her assistant.

Summer Vacations – SHARP Apprentices wanting to take vacation time in the middle of the program was another problem.

Resolution – The SHARP Coordinator proposes that a no vacation policy be added to the requirements to eliminate this problem.

Transportation – The third problem was the lack of transportation to the activity sites. During the ARC SHARP '96 and '97 programs apprentices were instructed to find their own transportation to the sites. An additional issue is the liability of apprentices driving themselves especially if they are off Center.

Resolution – The SHARP Coordinator will discuss this issue with other Centers to learn what they do to transport their apprentices. Also MTSI will review this issue at the Planning Conference with the Centers and discuss liability.

IV&V Apprentices – The two apprentices that are located in West Virginia are a part of the Ames Program. However some of the program requirements were not fulfilled by these apprentices, partially because the SHARP Coordinator did not fully understand the requirements.

Resolution – These apprentices will be under Langley Research Center next year. The SHARP Coordinator proposes that the LaRC SHARP Coordinator take a more active role in informing the IV&V Coordinator of program requirements. In addition, MTSI will invite the SHARP Coordinator from IV&V and Wallops Flight Facility (a part of Goddard Space Flight Center) to the 1998 Planning Conference.

Dryden Flight Research Center

The total number of applicants has decreased in 1997 (from 55 to 35) and there is a need to increase that number in the future.

Resolution – New recruiting strategies are being planned for 1998. DFRC has worked closely with the Public Affairs Office to develop a DFRC recruitment video to send out to high schools. In addition, MTSI will be revising the SHARP Recruitment Video in 1998 and is also developing recruitment posters.

Goddard Space Flight Center

Initially, during the 1998 recruiting season, GSFC was unable to identify a point of contact to accept inquiries regarding the summer SHARP Program for next year. The SHARP Coordinator could not be listed as the point of contact because she is not on Center full time during this period.

Two apprentices had to be terminated for failure to complete the entire eight weeks at GSFC. Both of these apprentices were forewarned about taking the time off from the program. However, both apprentices decided to take the time off for non-emergency situations.

Resolution – For this year, MTSI will be the Point of Contact and will accept inquiries for Goddard's SHARP Program. The resolution for students taking vacations during the program is addressed in the recommendations section of this report.

Johnson Space Center – No issues reported at this time

Kennedy Space Center

KSC SHARP staff was concerned with the amount of time it took to receive the SHARP Apprentice Information Forms to distribute to their apprentices. The earlier that they receive the SHARP Apprentice Information Forms, the more follow up they could provide to schools that request extra information.

Resolution – MTSI discussed the timelines for receiving the Information Forms during the 1997 Planning Conference. The SHARP Coordinators suggested a specific time that they would like to receive the Information Forms. For the 1998 recruiting year, the Information Forms were distributed in October and KSC stated that their issue was resolved.

Langley Research Center – No issues reported at this time

Lewis Research Center – No issues reported at this time

Marshall Space Flight Center – No issues reported at this time

Stennis Space Center - No issues reported at this time

RECOMMENDATIONS

VI. RECOMMENDATIONS

Listed below are recommendations from MTSI as well as from the NASA Centers to improve the implementation of the program. Some of the recommendations are for the SHARP Program as a whole and other recommendations are activities that the individual Centers would like to incorporate into their programs in the future.

MTSI recommends the following suggestions regarding two areas of concern that were previously mentioned.

(1) Limit the amount of slots available to the children of NASA employees.

One of the SHARP Coordinators expressed his concerns with the new hiring regulation 5 CFR 310 which allows a student to work in the same agency with a relative when there is no direct reporting relationship and the relative is not in a position to influence or control the student's appointment, employment promotion or advancement within the agency. His concern is that the program will lose its integrity because the coordinators may be pressured into hiring relatives of NASA employees. MTSI recommends that a certain amount of slots should be available for relatives of NASA employees and these students should not exceed the allotted number. This will enable the Program to maintain its original goals and objectives.

(2) Emphasize the importance of apprentices participating for the full duration of the program.

In light of the attendance problem experienced this year, MTSI highly recommends that each Center reinforce to the parents and students, during the orientation and in all communications prior to program commencement, the consequences of not participating for the full duration of the program.

NASA Centers Recommendations

Ames Research Center

Mentor Handbook – MTSI did a wonderful job of putting together the Mentor Handbook. Many of the mentors at ARC used the handbooks and referenced them often. One way to improve the handbooks is to provide section dividers and make it easier to reference. Also a section on Child Labor Laws would be helpful. This is especially important to Centers who are utilizing MTSI as the apprentices' employer.

Student Involvement in Social Activities – Involve the SHARP Apprentices more in social function planning such as the Mentor Picnic. Have them take more of a lead role in hosting events. Several apprentices had a few good ideas on how to improve the picnic.

Activities – Include more onsite activities. Some recommendations would be a tour of the Space Encounter Facility and a tour of Space Camp. Another would be for the apprentices to tour each other's work sites.

Goddard Space Flight Center

The mentors at GSFC had the opportunity to screen, interview and select the apprentices. The program year is successful each year that the mentors participate in the selection of the apprentices. GSFC recommends that other Centers include the mentors in the selection of apprentices because mentors are usually more willing to work at the relationships if they were involved in selecting their apprentices.

Johnson Space Flight Center

Increase communications between mentors and the SHARP Coordinator. This was the SHARP Coordinator's first year with the program and she feels she devoted all of her time communicating with apprentices. Next year she would like to increase interaction with the mentors.

Kennedy Space Center

An updated SHARP informational video would be beneficial. This way KSC SHARP staff could send out the tape during the year before applications are distributed. KSC has an older recruitment video made in 1984 and it is outdated.

Langley Research Center

Down-sizing of the LaRC civil service force has created a move towards requesting contractor companies to provide apprenticeship slots. LaRC recommends utilizing contractor personnel as mentors to other Centers.

Lewis Research Center

In addition to the orientation and the Mentor's Guide, new strategies need to be developed for the mentors to fully understand the program.

Marshall Space Flight Center

More emphasis could be placed upon consolidating forms that requests the same information and placing office equipment before the start of the program would greatly contribute to the operation and efficiency of the program.

Stennis Space Center

1) The Field Support Funds should be forwarded as close to the program start date as possible
2) Try to schedule a ViTS earlier in the summer just for introductions and center profiles.

MTSI will analyze these recommendations and implement the suggestions that benefit the entire SHARP Management Team. Additionally, MTSI will provide opportunities to discuss some of the issues at the 1998 Planning Conference.

CONCLUSION

VII. CONCLUSION

The 1997 SHARP Program was a banner year. NASA Headquarters, MTSI , and the NASA Centers were equally pleased with the implementation of this year's program. The year began with a successful planning conference followed by a great summer session and ending with a dynamic Newsletter.

All of the NASA Coordinators stated that they had a mature group of students this summer. SHARP Co-Program Manager, Lisa Williams, mentioned that the apprentices she met this summer appeared to be very grateful for the opportunity to participate in the program. The SHARP Staff at Kennedy Space Center, Ames Research Center, and Stennis Space Center expressed an interest in hiring their apprentices as contractor personnel next year.

All of the NASA and SHARP Coordinators submitted their EDCATS forms within the specified deadline. After participating in the EDCATS workshop, the SHARP Coordinators mentioned that they were more confidant with the system which enabled them to assist the apprentices with completing their Student Data/Feedback Forms.

The 1998 SHARP Planning Conference will be hosted by Stennis Space Center in Mississippi. The conference is scheduled for March 26 – 28, 1998. MTSI will review the SHARP Recruitment Poster and discuss the SHARP Recruitment Video with

coordinators at the conference. The participants will explore additional strategies that could be used to recruit more students to the program. MTSI will also conduct a follow up review of the EDCATS and an Internet Workshop. In addition, MTSI will explore the Centers' recommendations, issues and concerns mentioned in the previous sections.

APPENDICES

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SHARP MANAGEMENT TEAM
PROGRAM YEAR 1997

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Ames Reseacn Center

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Amon	Browning	5207 Orkney Ct.	Newark, Ca. 94560	Ames Research Center Windtunnels
Mariel	Cabellero	1475 Lochner Dr.	San Jose, Ca. 95127	Experiments in the Psychophysiological Research Lab
Annie	Cheng	1023 Miller Ave.	San Jose, Ca. 95129	(2nd Year Student)
Dan	Collins	2966 Moorpark Ave. #42	San Jose, Ca. 95128	Interpreting Keiper Airborne Observatory Flight Data
Victoria	Davis	1238 Henderson Ave. #1	Sunnyvale, Ca. 94086	Experiments in the Psychophysiological Research Lab
Jason	dela Cruz	3138 Woods Way	San Jose, Ca. 95148	Perception and Behavioral Adaptation Group
Jeffrey	Defensor	1436 Bob White Pl.	San Jose, Ca. 95131	(2nd Year Student)
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Sheffield	Lesure	2375 Clipper Street	San Mateo, Ca. 94403	Study of Zebrafish on the Space Station
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Irivin Lee, III	High End Computer Generated Graphics
Ebony Mack	Monitoring HST Control Center
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Yvonne Langdon	Firewall Security Checkpoint vs Guantlet
Rashea McCall	Ionospheric Layers
Isaac Miller	FDD Landsatt PreMission Timeline
Darryl Moses	Configuration of Attitude Software using Generalized Support Software
Kristin Murphy	TRACE
Astrid Myers	Creating and Editing HTML
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Evelyn Rawley	Data Entry
Samantha Scruggs	Analysis of Spacecraft Support Systems
Sigmund Young	Analysis of Pivot-Angle Correlation for SRS Breadboard

1997 SHARP APPRENTICES AT JOHNSON SPACE CENTER

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Juliet Galvez	Nimitz	Reagan Redman	Chamber A Light Evaluation
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Hassan Hilliard	Sterling	Vicki Cantrell	SR&QA Logo Contest
Ja'Mail Johnson	Forest Brook	Herbert Mitchell	SLA Constructions
Beverly Karhson	Washington	Joyce Carpenter	Lunar Reference Mission
Xenia Murray	Washington	Richard Gavin	Mir Debriefing Question Summary
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NASA Summer High School Apprenticeship Research Program (SHARP)

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Banks, Lerone D. 1913 Keeter Run Chesapeake, VA 23320 757-424-4259	Indian River 12th	**The Cutting Edge of Pressure Measurement: Pressure Sensitive Paint**
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Simmons, Melissa M. 467 Michael Irvin Dr. Newport News, VA 23608 757-887-1175	Denbigh 12th	**Affordable Air Travel Project**
Sinclair, S. Darden 4216 Thoroughgood Dr. Virginia Beach, VA 23455 757-464-4226	Bayside 12th	**Tests of ACR Specimens Using the High Heat Flux Facility**
Sloan, Bernard, Jr. 8 Pin Oak Ct. Hampton, VA 23666 757-838-7398	Bethel 12th	**Blood Gas Analysis Using an Interferometric Spectrophotometer: Concept and Preliminary Investigation of Hemoglobin**
Thornhill, Josh A. 5441 Brockie St. Virginia Beach, VA 23464 757-479-0507	Tallwood 12th	**The Use of Flash and Quartz Lamps in Thermal Inspection Technologies**

Tiv, Backhean
211 Dover Rd.
Hampton, VA 23666
757-827-5369

Bethel
12th

Validating Users and Fortran Programming

Williams, Tina C.
316 Rudisill Rd.
Hampton, VA 23669
757-850-8103

Kecoughtan
12th

Evaluation of Various Factors Influencing the Tire/Runway Interface

1997 LERC Student Projects

Name	Project/Lab
Sanjeev Bhasker	Space Experiments Division
Bruce Banks	Power Technology Division
Nathan Brown	Computer Services Division
Maya Davis	Space Electronics Division
Margaret Tuma	Instrumentation and Control Technology Division
Uriah Gilmore	Space Electronics Division
Bari Justin Goggins	Space Experiments Division
Matthew Gray	Materials Division
Stephen Harasim	Space Experiments Division
Samantha Holmes	Computer Services Division
Kasey King	Space Electronics Division
Zarach Morgan	Fabrication Support Division
Marissa McGann	Space Experiments Division
Joshua Melendez	Structures Division
John Merrill	Facilities Operations Division
Lisa Muckley	Office of Safety and Mission Assurance
Jael Panagaris	Space Experiments Division
Janetta Pewitt	Space Electronics Division
Bradford Picot	Space Experiments Division

LeRC Con't

Brett Pipitone	Propulsions Systems Division
Emeri Scott	Structure Division
Cassandra Smith	Office of Community and Media Relations
Kakra Soadwa	Space Experiments Division
Kimberly Staveskie	Technical Services Directorate
Bethany Stelnicki	Power Technology Division
Kim Chau Vo	Propulsion Systems Division
Peggy Wang	Test Installations Division
James Williams	ACTS Project Office
Jennifer Wingfield	Space Propulsion Technology Division
Natalie Woods	Space Propulsion Technology Division
Robert Wrobel	Power Technology Division

1997 Apprentice Directory
NASA/Marshall Space Flight Center
Summer High School Apprenticeship Research Program

Tokunbo (Toks) Aladele Adeshiyan
106 McDonnell Avenue
Huntsville, AL 35811
Phone: (205) 534-1775
Topic: *The Exploration of Optical Analysis Techniques*

Annukka Aida Antar
12021 Comanche Trail
Huntsville, AL 35803
Phone: (205) 883-1991
Topic: *Thin Film Thickness Distribution Under Physical Vapor Deposition*

Brian Charles Barto Barnes
3310 Stonebrook Circle
Huntsville, AL 35810
Phone: (205) 852-5996
Topic: *Research and Development of Housekeeping Board and Backplane in Lightning Mapper Sensor (LMS)*

Beminet Teshome Gabre
6306 Cedar Point Drive
Huntsville, AL 34810
Phone: (205) 859-6089
Topic: *Space Shuttle Main Engine High Pressure Oxidizer Turbopump Inducer Water Flow Test*

Levi Getachew Gabre
114 Meadow Run
Huntsville, AL 35811
Phone: (205) 859-6153
Topic: *Testing of the Volatile Removal Assembly (VRA) Flight Experiment (EE) for the Spacehab Mission Integration*

Daunte Simmone Gibbs
4802 Nabors Lane
Huntsville, AL
Phone: (205) 859-3977
Topic: *Space Station Prototype Control Moment Gyro Vault Air Temperature Measurement*

(Directory continued)

Erica Danelle Ignont
120 Asheville Drive
Huntsville, AL 35811
Phone: (205) 852-7077
Topic: *Incorporation of Metals into Aerogels for Ultra Lightweight High Surface Area Catalytic Materials*

Be'ttina Giovanna King
2516 Rochelle Drive
Huntsville, AL 35810
Phone: (205) 859-5129
Topic: *Thin Film Fabrication and Analysis of Diamond*

Chambre' Malone
3521 Glendale Lane
Huntsville, AL 35810
Phone: (205) 852-5434
Topic: *Testing a Rocket Engine for Combustion Efficiency*

Delwin Sheldon Merchant
872 Plummer Road
Huntsville, AL 35806
Phone: (205) 722-0183
Topic: *Range Safety Receiver Signal Strength Data*

Donald Warren Monroe
3201 Rita Lane
Huntsville, AL 35810
Phone: (205) 859-9355
Topic: *Human Factors Assessment of Microgravity Science Glovebox (MSG) Workstation Layout Using Human Test Subjects and Human Computer Modeling*

Renita Falana Montgomery
3800 Millbrae Drive
Huntsville, AL 35810
Phone: (205) 852-3355
Topic: *Low Cost Boost Technology Drive Electronics Assembly*

(Directory Continued)

Annie Laura Moon
303 New Hope Road
New Hope, AL 35760
Phone: (205) 723-4097
Topic: *The Characterization of Vacuum Plasma Spray (VPS) Formed Niobium Alloys for the Upper Stage Thrust Chamber*

Rex Ulysses Noble
642 Toney School Road
Toney, AL 35773
Phone: (205) 852-6042
Topic: *Solar Array Data Reduction and Designing*

Shanika Sharelle Thompson
5507 Oakwood Road
Huntsville, AL 35806
Phone: (205) 722-2012
Topic: *Image Analysis and Flow Visualization Studies*

Jacinta Arvonne Tibbs
610 Greenfield Drive
Huntsville, AL 35811
Phone: (205) 852-0308
Topic: *Design and Documentation of the Current and Error Amplifier Curcuit (I&EKCKT) for the Space Station Furnace Facility (SSFF) Magnetic Dampening Control Unit*

Andreana Monique Walker
6000 Colfax Road
Huntsville, AL 35810
Phone: (205) 852-8535
Topic: *Determination of Properties of Lubricants and Vulcanized Material*

Marion Willie Walker, III
102 Kittyhawk Lane
Harvest, AL 35749
Phone: (205) 430-3387
Topic: *Production of a Guestbook Registry for the Web Page of the Materials and Processes Laboratory of Marshall Space Flight Center*

Angela Mary Theola Warren
2133 Greenslope Trail
Huntsville, AL 35811
Phone: (205) 539-7915
Topic: *Application of World Wide WEB Technology to Space Station Operations*

1997 Student Projects
Stennis Space Center

Name	Project/Lab
Jennifer Barnes	Calibration Program Manual
Mary Antoinette Dedeaux	Propulsion Test Directorate
Lisa Federoff	Plant Stress Detection Field Testing
Susan Groves	Resource Development for Earth System Science and Geographical Information Systems (GIS)
Kimberly Jackson	Importante of Computerized Databases for Training and Accident Scenarios
Rachel Kuzio	Design and Construction of a Narrow Band Plant Detection System
Richard Simko	Data Analysis for Rocket Propulsion Test Facilities

ADMINISTRATIVE MATERIALS

ABOUT MODERN TECHNOLOGY SYSTEMS, INC.

Modern Technology Systems, Inc. (MTSI) is a diversified technical services firm, whose focus centers around total information systems support which includes Client Server Development, Facility Management Services, Data Center Operations and Education and Training. Since its formation in 1986, the company has grown to include customers in both the federal government and the private sector. MTSI has been the contractor for the National Aeronautics and Space Administration's (NASA's) Summer High School Apprenticeship Research Program **(SHARP)** since 1992.

MTSI is a small, minority and female-owned firm headquartered in Riverdale, Maryland with branches in Oklahoma City, OK and Pasadena, CA. Its staff includes approximately 200 professional and administrative employees. The company has been certified under the Small Business Administration's Section 8(a) Program since 1989.

MTSI prides itself on providing its clients with the highest quality of services. The key to our growth is and will continue to be the collective mindpower and exemplary performance of our staff, guided by a management philosophy built upon total quality leadership and total quality management.

Modern Technology Systems Incorporated

Application for Employment
Summer High School Apprenticeship Research Program
SHARP

Equal access to programs, services and employment is available to all persons. Those applicants requiring special assistance in completing the application and/or interview process should notify the SHARP Coordinator.

PLEASE PRINT

Name: _____
Last First Middle

Address: _____
Street City State Zip Code

Telephone Number: (____)_____ Social Security Number: _____-_____-_____

If you live in Alabama, California or Maryland and are also under 18 years of age, will you be able to furnish a work permit?
Yes ☐ No ☐

Have you previously participated in the SHARP program? Yes ☐ No ☐

If yes, please provide the date: ___/___/___

Dates available for work: From: ___/___/___ to ___/___/___

If hired, can you furnish proof that you are legally permitted to work in the U.S.?
Yes ☐ No ☐

Name & Address of High School Please provide your Grade Point Average/Rank: _____

_____

_____

_____

_____

(REVISED)

Computer Skills: List all makes and models of computers and operating systems with which you have had operations experience:

Computer Programming Language: List the different computer languages that you have been exposed to at school, home or at work.

List any special accomplishments, publications, or awards:

List any additional information you would like us to consider:

As standard practice for all new employees, I will be required to sign an Agreement for Assignment of Inventions and Covenant Against Disclosure. Furthermore, I acknowledge that MTSI has established a Drug-Free Awareness Program and should I become an employee of MTSI I will abide by the terms outlined in the Drug Abuse Policy.

It is understood and agreed upon that any misrepresentation by me on this application will be sufficient cause for cancellation of this application and/or separation from the employer's service if I have been employed.

Signature of Applicant _____ Date _____

Modern Technology Systems Incorporated is an Equal Opportunity Employer. In compliance with federal, state and local laws MTSI hires, trains and promotes all qualified employees without unlawful discrimination on the basis of race, color, sex, religious creed, national origin, physical or mental disability.

(REVISED)

EMPLOYEE RECORD

_____ _____ _____ Jr. Sr.
Last Name First Name M. I.
Social Security #_____ - _____ - _____ Marital Status _____ Sex _____
Street Address _____
City _____ State _____ County _____ Zip _____
Home Phone _____ Birthdate _____ Place of Birth _____

Security Clearance Level _____ Date Granted _____

Military Status: Active Inactive Retired N/A Last Active Date _____

INCOMING TAX WITHHOLDING
Filing Status: Single or Married Withholding State:

Work State: Number of Exemptions You Are Claiming: _____

Federal State Local No State Taxes W-4 Certificate

Additional Taxes Withheld: Federal $ _____ State $ _____

MEDICAL PLAN COVERAGE (type/group)

IN CASE OF EMERGENCY NOTIFY:

_____ _____ _____
Name Relationship Phone Number (home/work)

EEO INFORMATION (Please circle one)

Black Hispanic Caucasian Asian/Pacific Islander

American Indian Multiracial (please specify):_____

EDUCATION (List any colleges or courses relating to your field)

Course Degree Date

_____

I certify that all information given is true and complete to the best of my knowledge.

_____ _____
Signature Date

(REVISED)

MTSI **Memorandum**

TO: Employees living in MD, AL or CA
(under the age of 18)

FROM: Human Resources Department

RE: ***Work Permit for Minors***

If you are under the age of eighteen, state law requires that you submit to your employer a completed work permit before or on your first day of employment. The work permit may be obtained from your local high school. The three sections of the work permit are to be completed by the employer, parent/guardian and the school administration.

Please keep in mind that you will not be permitted to work until all sections have been completed and the work permit filed with our office.

If you, your parent or guardian have any questions, please contact Lisa Loeffler at Modern Technology Systems' Corporate office at 301-985-5171.

Form W-4 (1997)

Want More Money In Your Paycheck?
If you expect to be able to take the earned income credit for 1997 and a child lives with you, you may be able to have part of the credit added to your take-home pay. For details, get Form W-5 from your employer.

Purpose. Complete Form W-4 so that your employer can withhold the correct amount of Federal income tax from your pay. Form W-4 may be completed electronically, if your employer has an electronic system. Because your tax situation may change, you may want to refigure your withholding each year.

Exemption From Withholding. Read line 7 of the certificate below to see if you can claim exempt status. *If exempt, only complete lines 1, 2, 3, 4, 7, and sign the form to validate it.* No Federal income tax will be withheld from your pay. Your exemption expires February 17, 1998.

Note: *You cannot claim exemption from withholding if (1) your income exceeds $650 and includes unearned income (e.g., interest and dividends) and (2) another person can claim you as a dependent on their tax return.*

Basic Instructions. If you are not exempt, complete the Personal Allowances Worksheet. Additional worksheets are on page 2 so you can adjust your withholding allowances based on itemized deductions, adjustments to income, or two-earner/two-job situations. Complete all worksheets that apply to your situation. The worksheets will help you figure the number of withholding allowances you are entitled to claim. However, you may claim fewer allowances than this.

Head of Household. Generally, you may claim head of household filing status on your tax return only if you are unmarried and pay more than 50% of the costs of keeping up a home for yourself and your dependent(s) or other qualifying individuals.

Nonwage Income. If you have a large amount of nonwage income, such as interest or dividends, you should consider making estimated tax payments using Form 1040-ES. Otherwise, you may find that you owe additional tax at the end of the year.

Two Earners/Two Jobs. If you have a working spouse or more than one job, figure the total number of allowances you are entitled to claim on all jobs using worksheets from only one W-4. This total should be divided among all jobs. Your withholding will usually be most accurate when all allowances are claimed on the W-4 filed for the highest paying job and zero allowances are claimed for the others.

Check Your Withholding. After your W-4 takes effect, use **Pub. 919,** Is My Withholding Correct for 1997?, to see how the dollar amount you are having withheld compares to your estimated total annual tax. Get Pub. 919 especially if you used the Two-Earner/Two-Job Worksheet and your earnings exceed $150,000 (Single) or $200,000 (Married). To order Pub. 919, call 1-800-829-3676. Check your telephone directory for the IRS assistance number for further help.

Sign This Form. Form W-4 is not considered valid unless you sign it.

Personal Allowances Worksheet

A Enter "1" for **yourself** if no one else can claim you as a dependent . . . . . A ____

B Enter "1" if:
- You are single and have only one job; or
- You are married, have only one job, and your spouse does not work; or
- Your wages from a second job or your spouse's wages (or the total of both) are $1,000 or less.

. . B ____

C Enter "1" for your **spouse.** But, you may choose to enter -0- if you are married and have either a working spouse or more than one job (this may help you avoid having too little tax withheld) . . . . . C ____

D Enter number of **dependents** (other than your spouse or yourself) you will claim on your tax return . . . . . D ____

E Enter "1" if you will file as **head of household** on your tax return (see conditions under **Head of Household** above) . E ____

F Enter "1" if you have at least $1,500 of **child or dependent care expenses** for which you plan to claim a credit . . F ____

G Add lines A through F and enter total here. **Note:** This amount may be different from the number of exemptions you claim on your return ▶ G ____

For accuracy, complete all worksheets that apply.
- If you plan to **itemize or claim adjustments to income** and want to reduce your withholding, see the Deductions and Adjustments Worksheet on page 2.
- If you are **single** and have **more than one job** and your combined earnings from all jobs exceed $32,000 OR if you are **married** and have a **working spouse or more than one job,** and the combined earnings from all jobs exceed $55,000, see the Two-Earner/Two-Job Worksheet on page 2 if you want to avoid having too little tax withheld.
- If **neither** of the above situations applies, **stop here** and enter the number from line G on line 5 of Form W-4 below.

----------- **Cut here and give the certificate to your employer. Keep the top portion for your records.** -----------

Form **W-4**
Department of the Treasury
Internal Revenue Service

Employee's Withholding Allowance Certificate

▶ **For Privacy Act and Paperwork Reduction Act Notice, see reverse.**

OMB No. 1545-0010
1997

1 Type or print your first name and middle initial | Last name | 2 Your social security number

Home address (number and street or rural route)

3 ☐ Single ☐ Married ☐ Married, but withhold at higher Single rate.
Note: *If married, but legally separated, or spouse is a nonresident alien, check the Single box.*

City or town, state, and ZIP code

4 If your last name differs from that on your social security card, check here and call 1-800-772-1213 for a new card . . . . . ▶ ☐

5 Total number of allowances you are claiming (from line G above or from the worksheets on page 2 if they apply) . 5

6 Additional amount, if any, you want withheld from each paycheck . . . . . 6 $

7 I claim exemption from withholding for 1997, and I certify that I meet **BOTH** of the following conditions for exemption:
- Last year I had a right to a refund of **ALL** Federal income tax withheld because I had **NO** tax liability; **AND**
- This year I expect a refund of **ALL** Federal income tax withheld because I expect to have **NO** tax liability.

If you meet both conditions, enter "EXEMPT" here . . . . . ▶ 7

Under penalties of perjury, I certify that I am entitled to the number of withholding allowances claimed on this certificate or entitled to claim exempt status.

Employee's signature ▶ **Date** ▶ , 19

8 Employer's name and address (Employer: Complete 8 and 10 only if sending to the IRS) | 9 Office code (optional) | 10 Employer identification number

Form
MW 507
Rev. 11/1/92

Employee's Maryland Withholding Exemption Certificate

Comptroller of the Treasury ◆ Income Tax Division ◆ Annapolis, Maryland 21411 ◆ Phone (410) 974-3739

Print your full name	Your social security number
Address (including zip code)	County of residence (or Baltimore City)

1. Total number of exemptions you are claiming from worksheet below _____
2. Additional withholding per pay period under agreement with employer _____
3. I claim exemption from withholding because (see instructions below and check boxes that apply)
   - ☐ a. Last year I did not owe any Maryland income tax and had a right to a full refund of all income tax withheld, *AND*
   - ☐ b. This year I do not expect to owe any Maryland income tax and expect to have the right to a full refund of all income tax withheld.

   If both **a** and **b** apply, enter year applicable _____ (year effective) Enter "EXEMPT" here _____
4. Certification of Non-Residence in the state of Maryland (see instructions on reverse side.) I certify that I am not domiciled in the state of Maryland, and that I do not maintain a place of abode within Maryland. I further certify that my permanent residence is:

   _____ City, town or post office address _____ County _____ State Enter "EXEMPT" here _____

Under the penalty of perjury, I further certify that I am entitled to the number of withholding allowances claimed on line 1 above, or if claiming exemption from withholding, that I am entitled to claim the exempt status on Line 3 or Line 4, whichever applies.

Employee's signature _____ Date _____

Employer's Name and Address (including zip code) (For employer use only)	Employer Identification Number

Worksheet and instructions

Line 1

A. Number of personal exemptions (total exemptions on lines A, C, and D of the federal W-4 or W-4A worksheet). _____

B. Number of additional exemptions for dependents over 65 years of age. _____

C. Number of additional exemptions for estimated itemized deductions, alimony payments, allowable child care expenses, qualified retirement contributions, business losses, and employee business expenses for the year. _____

D. Number of additional exemptions for taxpayer and/or spouse at least 65 years of age and/or blind. _____

E. Total - add lines A through D and enter here and on line 1 (Form MW 507). _____

EXEMPTIONS FOR DEPENDENTS - To qualify as your dependent, you must be entitled to an exemption for the dependent on your federal income tax return for the corresponding taxable year.

ADDITIONAL EXEMPTIONS FOR DEPENDENTS OVER 65 YEARS OF AGE - An additional exemption is allowed for dependents who are 65 years of age or older.

ADDITIONAL EXEMPTIONS - You may claim additional exemptions for estimated itemized deductions, alimony payments, allowable child care expenses, qualified retirement contributions, business losses, and employee business expenses for the year. One additional withholding exemption is permitted for each $1,200 of estimated itemized deductions or adjustments to income that exceeds the standard deduction allowance.

NOTE: Standard deduction allowance is 15% of Maryland adjusted gross income with a minimum of $1,500 and a maximum of $2,000 for each taxpayer.

ADDITIONAL EXEMPTIONS FOR TAXPAYER AND/OR SPOUSE - An additional $1,000 may be claimed if the taxpayer and/or spouse is at least 65 years of age and/or blind on the last day of the taxable year.

Line 2

ADDITIONAL WITHHOLDING PER PAY PERIOD UNDER AGREEMENT WITH EMPLOYER - If you are not having enough tax withheld, you may ask your employer to withhold more by entering an additional amount on line 2.

FEDERAL PRIVACY ACT INFORMATION - Social Security numbers must be included. The mandatory disclosure of your Social Security number is authorized by the provisions set forth in the Tax General Article of the Annotated Code of Maryland. Such numbers are used primarily to administer and enforce the individual income tax laws and to exchange income tax information with the Internal Revenue Service, other states and other tax officials of this state. Information furnished to other agencies or persons shall be used solely for the purpose of administering tax laws or the specific laws administered by the person having statutory right to obtain it.

DUTIES AND RESPONSIBILITIES OF EMPLOYER - Retain this certificate with your records. You are required to submit a copy of this certificate to the Income Tax Division when received if:

1. You have any reason to believe this certificate is incorrect,
2. the employee claims more than 14 exemptions,
3. employee claims exemptions from withholding because he/she had no tax liability for the preceding tax year, expects to incur no tax liability this year, and the wages are expected to exceed $200 a week, *or*
4. employee claims exemptions from withholding on the basis of nonresidence.

Upon receipt of any exemption certificate (Form MW 507), the Income Tax Division will make a determination and notify you if a change is required.

Once a certificate is revoked by the comptroller, the employer must send any new certificate from the employee to the comptroller for approval before implementing the new certificate.

If an employee claims exemption under 3 above, a new exemption certificate must be filed by February 15th of the following year.

DUTIES AND RESPONSIBILITIES OF EMPLOYEE - If, on any day during the calendar year, the number of withholding exemptions which the employee is entitled to claim is less than the number of exemptions claimed on the withholding exemption certificate in effect, the employee shall file a new withholding exemption certificate with the employer within 10 days after the change occurs.

Line 3

WHO MAY CLAIM EXEMPTION FROM WITHHOLDING OF INCOME TAX - You may be entitled to claim an exemption from the withholding of Maryland income tax if:

a. last year you did not owe any Maryland income tax and had a right to a full refund of any tax withheld; and

b. this year you do not expect to owe any Maryland income tax and expect to have a right to a full refund of all income tax withheld. If you are eligible to claim this exemption, your employer will not withhold Maryland income tax from your wages.

Line 4

CERTIFICATION OF NONRESIDENCE IN THE STATE OF MARYLAND - This line is to be completed only by persons employed in Maryland who are not domiciled within Maryland, and who do not maintain a place of abode within the state but who are residents of the District of Columbia, Pennsylvania, Virginia or West Virginia.

Line 4 is not to be used by nonresidents working in Maryland who are residents of any state not listed above, because such persons are liable for Maryland income tax, and withholding from their wages is required.

Generally, line 4 is to be used by those who reside within one of the states listed above who commute. The maintenance of a place of abode in Maryland for more than six months of the taxable year makes the person a statutory resident of Maryland and requires the filing of a resident return with application for any tax credit to which he may be entitled under the reciprocal provisions of the law.

If the status of the employee changes from nonresident to resident during the year, the employee will be subject to Maryland income tax from the date residence was established, and withholding of Maryland income tax will be required of the employer. The employee should notify the employer when such a change of residence takes place.

INSTRUCTIONS

PLEASE READ ALL INSTRUCTIONS CAREFULLY BEFORE COMPLETING THIS FORM.

Anti-Discrimination Notice. It is illegal to discriminate against any individual (other than an alien not authorized to work in the U.S.) in hiring, discharging, or recruiting or referring for a fee because of that individual's national origin or citizenship status. It is illegal to discriminate against work eligible individuals. Employers CANNOT specify which document(s) they will accept from an employee. The refusal to hire an individual because of a future expiration date may also constitute illegal discrimination.

Section 1 - Employee. All employees, citizens and noncitizens, hired after November 6, 1986, must complete Section 1 of this form at the time of hire, which is the actual beginning of employment. **The employer is responsible for ensuring that Section 1 is timely and properly completed.**

Preparer/Translator Certification. The Preparer/Translator Certification must be completed if Section 1 is prepared by a person other than the employee. A preparer/translator may be used only when the employee is unable to complete Section 1 on his/her own. However, the employee must still sign Section 1 personally.

Section 2 - Employer. For the purpose of completing this form, the term "employer" includes those recruiters and referrers for a fee who are agricultural associations, agricultural employers, or farm labor contractors.

Employers must complete Section 2 by examining evidence of identity and employment eligibility within three (3) business days of the date employment begins. If employees are authorized to work, but are unable to present the required document(s) within three business days, they must present a receipt for the application of the document(s) within three business days and the actual document(s) within ninety (90) days. However, if employers hire individuals for a duration of less than three business days, Section 2 must be completed at the time employment begins. **Employers must record: 1)** document title; **2)** issuing authority; **3)** document number; **4)** expiration date, if any; and **5)** the date employment begins. Employers must sign and date the certification. Employees must present original documents. Employers may, but are not required to, photocopy the document(s) presented. These photocopies may only be used for the verification process and must be retained with the I-9. **However, employers are still responsible for completing the I-9.**

Section 3 - Updating and Reverification. Employers must complete Section 3 when updating and/or reverifying the I-9. Employers must reverify employment eligibility of their employees on or before the expiration date recorded in Section 1. Employers **CANNOT** specify which document(s) they will accept from an employee.

- If an employee's name has changed at the time this form is being updated/reverified, complete Block A.
- If an employee is rehired within three (3) years of the date this form was originally completed and the employee is still eligible to be employed on the same basis as previously indicated on this form (updating), complete Block B and the signature block.
- If an employee is rehired within three (3) years of the date this form was originally completed and the employee's work authorization has expired or if a current employee's work authorization is about to expire (reverification), complete Block B and:
  - examine any document that reflects that the employee is authorized to work in the U.S. (see List A or C),
  - record the document title, document number and expiration date (if any) in Block C, and
  - complete the signature block.

Photocopying and Retaining Form I-9. A blank I-9 may be reproduced provided both sides are copied. The instructions must be available to all employees completing this form. Employers must retain completed I-9s for three (3) years after the date of hire or one (1) year after the date employment ends, whichever is later.

For more detailed information, you may refer to the INS Handbook for Employers, (Form M-274). You may obtain the handbook at your local INS office.

Privacy Act Notice. The authority for collecting this information is the Immigration Reform and Control Act of 1986, Pub. L. 99-603 (8 U.S.C. 1324a).

This information is for employers to verify the eligibility of individuals for employment to preclude the unlawful hiring, or recruiting or referring for a fee, of aliens who are not authorized to work in the United States.

This information will be used by employers as a record of their basis for determining eligibility of an employee to work in the United States. The form will be kept by the employer and made available for inspection by officials of the U.S. Immigration and Naturalization Service, the Department of Labor, and the Office of Special Counsel for Immigration Related Unfair Employment Practices.

Submission of the information required in this form is voluntary. However, an individual may not begin employment unless this form is completed since employers are subject to civil or criminal penalties if they do not comply with the Immigration Reform and Control Act of 1986.

Reporting Burden. We try to create forms and instructions that are accurate, can be easily understood, and which impose the least possible burden on you to provide us with information. Often this is difficult because some immigration laws are very complex. Accordingly, the reporting burden for this collection of information is computed as follows: **1)** learning about this form, 5 minutes; **2)** completing the form, 5 minutes; and **3)** assembling and filing (recordkeeping) the form, 5 minutes, for an average of 15 minutes per response. If you have comments regarding the accuracy of this burden estimate or suggestions for making this form simpler, you can write to both the Immigration and Naturalization Service, 425 I Street, N.W., Room 5304, Washington, D.C. 20536; and the Office of Management and Budget, Paperwork Reduction Project, OMB No. 1115-0136, Washington, D.C. 20503.

EMPLOYERS MUST RETAIN COMPLETED I-9
PLEASE DO NOT MAIL COMPLETED I-9 TO INS

Recycled Paper
Our commitment to protecting the environment

U.S. Department of Justice
Immigration and Naturalization Service

Form I-9 (Rev. 11-21-91) N
Employment Eligibility Verification

Please read instructions carefully before completing this form. The instructions must be available during completion of this form. ANTI-DISCRIMINATION NOTICE. It is illegal to discriminate against work eligible individuals. Employers CANNOT specify which document(s) they will accept from an employee. The refusal to hire an individual because of a future expiration date may also constitute illegal discrimination.

Section 1. Employee Information and Verification. To be completed and signed by employee at the time employment begins.

Print Name: Last	First	Middle Initial	Maiden Name
Address (Street Name and Number)		Apt. #	Date of Birth (month/day/year)
City	State	Zip Code	Social Security #

I am aware that federal law provides for imprisonment and/or fines for false statements or use of false documents in connection with the completion of this form.

I attest, under penalty of perjury, that I am (check one of the following):
- ☐ A citizen or national of the United States
- ☐ A Lawful Permanent Resident (Alien # A)_____
- ☐ An alien authorized to work until ___/___/___
(Alien # or Admission #)_____

Employee's Signature | Date (month/day/year)

Preparer and/or Translator Certification. (To be completed and signed if Section 1 is prepared by a person other than the employee.) I attest, under penalty of perjury, that I have assisted in the completion of this form and that to the best of my knowledge the information is true and correct.

Preparer's/Translator's Signature | Print Name

Address (Street Name and Number, City, State, Zip Code) | Date (month/day/year)

Section 2. Employer Review and Verification. To be completed and signed by employer. **Examine one document from List A OR examine one document from List B and one from List C** as listed on the reverse of this form and record the title, number and expiration date, if any, of the document(s).

List A	OR	List B	AND	List C
Document title:				
Issuing authority:				
Document #:				
Expiration Date (if any): ___/___/___		___/___/___		___/___/___
Document #:				
Expiration Date (if any): ___/___/___				

CERTIFICATION - I attest, under penalty of perjury, that I have examined the document(s) presented by the above-named employee, that the above-listed document(s) appears to be genuine and to relate to the employee named, that the employee began employment on (month/day/year) ___/___/___ **and that to the best of my knowledge the employee is eligible to work in the United States. (State employment agencies may omit the date the employee began employment.)**

Signature of Employer or Authorized Representative | Print Name | Title

Business or Organization Name | Address (Street Name and Number, City, State, Zip Code) | Date (month/day/year)

Section 3. Updating and Reverification. To be completed and signed by employer.

A. New Name (if applicable) | B. Date of rehire (month/day/year) (if applicable)

C. If employee's previous grant of work authorization has expired, provide the information below for the document that establishes current employment eligibility

Document Title: _____ Document #: _____ Expiration Date (if any): ___/___/___

I attest, under penalty of perjury, that to the best of my knowledge, this employee is eligible to work in the United States, and if the employee presented document(s), the document(s) I have examined appears to be genuine and to relate to the individual.

Signature of Employer or Authorized Representative | Date (month/day/year)

LISTS OF ACCEPTABLE DOCUMENTS

LIST A

Documents that Establish Both Identity and Employment Eligibility

1. U.S. Passport (unexpired or expired)
2. Certificate of U.S. Citizenship (INS Form N-560 or N-561)
3. Certificate of Naturalization (INS Form N-550 or N-570)
4. Unexpired foreign passport, with *I*-551 stamp or attached INS Form *I*-94 indicating unexpired employment authorization.
5. Alien Registration Receipt Card with photograph (INS Form *I*-151 or *I*-551)
6. Unexpired Temporary Resident Card (INS Form *I*-688)
7. Unexpired Employment Authorization Card (INS Form *I*-688A)
8. Unexpired Reentry Permit (INS Form *I*-327)
9. Unexpired Refugee Travel Document (INS Form *I*-571)
10. Unexpired Employment Authorization Document issued by the INS which contains a photograph (INS Form *I*-688B)

OR

LIST B

Documents that Establish Identity

1. Driver's license or ID card issued by a state or outlying possession of the United States provided it contains a photograph or information such as name, date of birth, sex, height, eye color, and address
2. ID card issued by federal, state, or local government agencies or entities provided it contains a photograph or information such as name, date of birth, sex, height, eye color, and address
3. School ID card with a photograph
4. Voter's registration card
5. U.S. Military card or draft record
6. Military dependent's ID card
7. U.S. Coast Guard Merchant Mariner Card
8. Native American tribal document
9. Driver's license issued by a Canadian government authority

For persons under age 18 who are unable to present a document listed above:

10. School record or report card
11. Clinic, doctor, or hospital record
12. Day-care or nursery school record

AND

LIST C

Documents that Establish Employment Eligibility

1. U.S. social security card issued by the Social Security Administration (other than a card stating it is not valid for employment)
2. Certification of Birth Abroad issued by the Department of State (Form FS-545 or Form DS–1350)
3. Original or certified copy of a birth certificate issued by a state, county, municipal authority or outlying possession of the United States bearing an official seal
4. Native American tribal document
5. U.S. Citizen ID Card (INS Form *I*–197)
6. ID Card for use of Resident Citizen in the United States (INS Form *I*-179)
7. Unexpired employment authorization document issued by the INS (other than those listed under List A)

Illustrations of many of these documents appear in Part 8 of the Handbook for Employers (M-274)

MTSI ANTI-HARASSMENT POLICY

Policy:

It is the policy of MTSI to promote a productive work environment and not to tolerate verbal or physical conduct by anyone including any employee, manager, co-worker, vendor, client or customer of the company that harasses, disrupts, or interferes with another's work performance or that creates an intimidating, offensive, or hostile environment.

Comment:

(1) Employees are expected to maintain a productive work environment that is free from harassing or disruptive activity. No form of harassment will be tolerated, including harassment for the following reasons: race, national origin, religion, disability, pregnancy, age, military status, or sex. Special attention should be paid to the prohibition of sexual harassment.

(2) Each manager has a responsibility to keep the workplace free of any form of harassment, and in particular, sexual harassment. No manager is to threaten or insinuate, either explicitly or implicitly, that an employee's refusal or willingness to submit to sexual advances will affect the employee's terms or conditions of employment.

(3) Other sexually harassing or offensive conduct in the workplace, whether committed by managers, employees, or non-employees, is also prohibited. This conduct includes:

(a) Unwanted physical contact or conduct of any kind, including sexual flirtations, touching, advances, or propositions;

(b) Verbal abuse of a sexual nature;

(c) Demeaning, insulting, intimidating, or sexually suggestive comments about an individual's dress or body;

(d) The display in the workplace of demeaning, insulting, intimidating, or sexually suggestive objects or pictures, including nude photographs.

(e) Demeaning, insulting, intimidating, or sexually suggestive written, recorded, or electronically transmitted messages.

Any of the above conduct, or other offensive conduct, directed at individuals because of their race, national origin, religion, disability, pregnancy, age, or military status is also prohibited.

(4) Any employee who believes that a manager's, other employee's, or nonemployee's actions or words constitute unwelcome harassment has a responsibility to report or

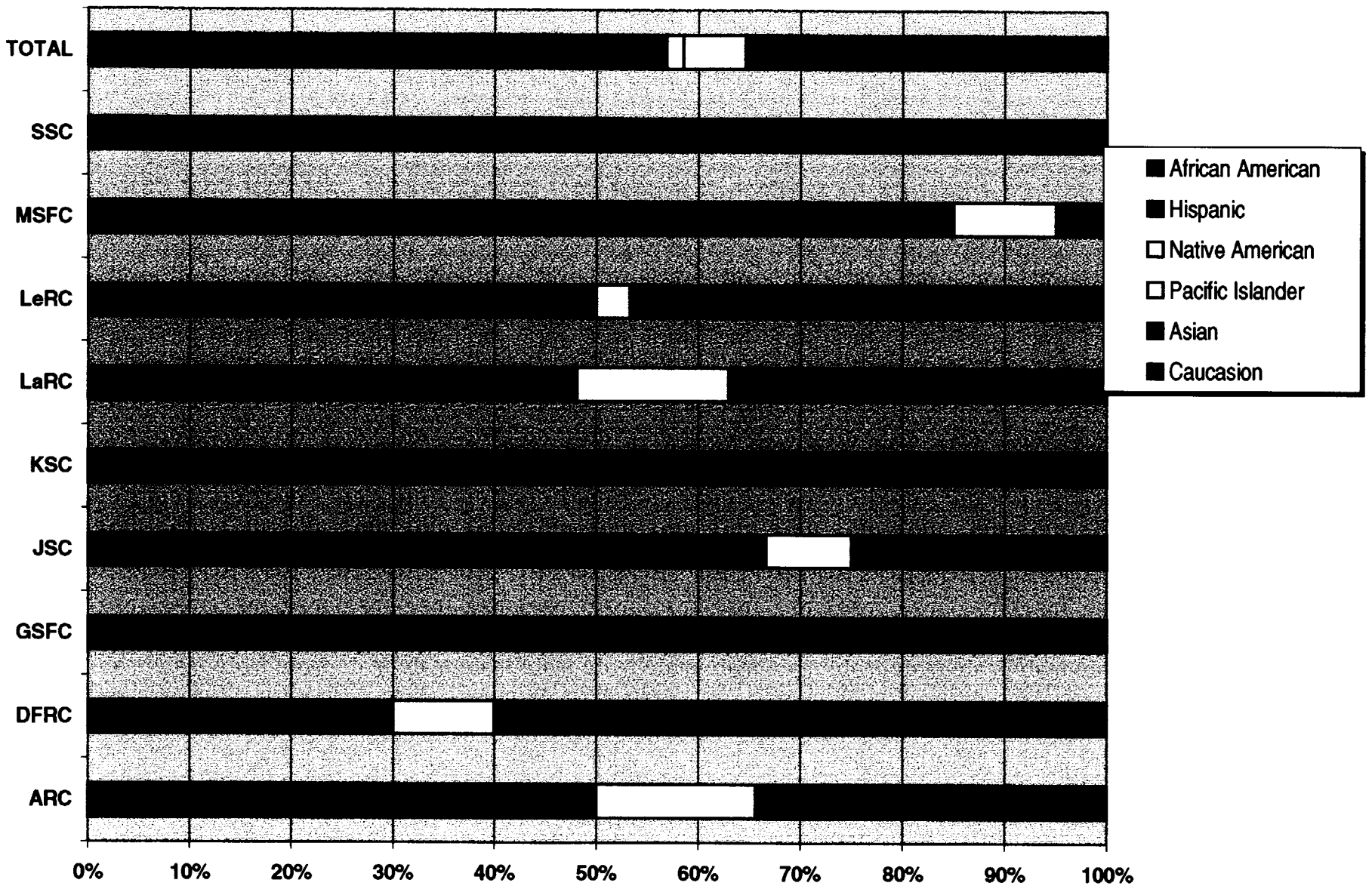
complain about the situation'as soon as possible. The report or complaint should be made immediately to the employee's manager or the Human Resource Administrator.

(5) All complaints of harassment are to be investigated promptly and in as impartial and confidential a manner as possible.Employees are required to cooperate in any investigation. A timely resolution of each complaint should be reached and communicated to the parties involved. Retaliation against any employee for filing a complaint or participating in an investigation is strictly prohibited.

(6) Any employee or manager who is found to have violated the harassment policy will be subject to appropriate disciplinary action, up to and including termination. MTSI prohibits any form of retaliation against employees for bringing bona fide complaints or providing information about harassment.

MISCELLANEOUS

1997 Apprentice Ethnic Profile



1997 APPRENTICE ETHNIC PROFILE BY CENTER

	ARC	DFRC	GSFC	JSC	KSC	LaRC	LeRC	MSFC	SSC	TOTAL
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
HISPANIC	10	2	0	2	2	1	2	0	0	**19**
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
PAC. ISL.	5	1	0	0	0	4	1	0	0	**11**
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
CAUCASIAN	4	5	0	3	10	6	12	1	4	**45**
TOTAL	**32**	**10**	**21**	**12**	**20**	**27**	**30**	**20**	**7**	**179**

	# of Students	% of Students
African Americans	82	46
[illegible]	[illegible]	[illegible]
Native Americans	3	2
[illegible]	[illegible]	[illegible]
Asians	19	10.5
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]

1997 SHARP PLANNING CONFERENCE
Agenda

Thursday, April 10

9:00 a.m. - 11:45 a.m.	Arrival	
11:45 a.m. - 1:45 p.m.	Registration	Ms. Tracy Davis SHARP Program Assistant
2:00 p.m. - 2:30 p.m.	Conference Welcome/Opening	Ms. Lisa Williams Claire Roach Modern Technology Systems Ms. Tracy Young Kennedy Space Center Ms. Deborah Glasco SHARP COTR
2:30 p.m. - 3:00 p.m.	Introductions/Conference Overview	Ms. Lisa Williams SHARP Co-Program Manager
3:00 p.m. - 3:30 p.m.	1996 SHARP Review	Ms. Claire Roach
3:30 p.m. - 4:15 p.m.	1997 SHARP Agenda and Highlights	Ms. Deborah Glasco
4:15 p.m. - 6:00 p.m.	EDCATS Session	Mr. Richard Roach Modern Technology Systems
6:00 p.m.	Dinner at your leisure	

Friday, April 11

7:30 a.m. - 8:00 a.m.	Registration	Ms. Tracy Davis
8:00 a.m.	Board Bus for Kennedy	
8:30 a.m. - 11:30 p.m.	Tour Kennedy Space Center	
11:30 a.m. - 12:15 p.m.	Return to Hotel	

Friday, April 11

12:30 p.m. - 2:00 p.m.	Group Lunch / Guest Speaker	Dr. Therman E. Evans Whole Life Associates, Inc.
2:00 p.m. - 2:30 p.m.	Rejuvenation Break	
2:30 p.m. - 3:45 p.m.	Break-Out Sessions NASA Coordinators SHARP Coordinators	 Ms. Deborah Glasco MTSI Staff
3:45 p.m. - 5:45 p.m.	Center Presentations (10 minutes per Center)	NASA or SHARP Coordinators
5:45 p.m.	Dinner at your leisure	

Saturday, April 12

8:30 a.m. - 10:30 a.m.	Professional Development Activity	Ms. Darlene Puckett Florida Training Systems
10:30 a.m. - 10:45 a.m.	Report on 1997 National Institute for Science Education Conference	Louvinia Wallace SHARP Coordinator
10:45 a.m. - 11:00 a.m.	Break	
11:00 p.m. - 11:45 p.m.	Review 1997 Guidelines	Ms. Lisa Williams
11:45 p.m. - 1:15 p.m.	Lunch	
1:15 p.m. - 1:45 p.m.	Web Page Demonstration	Richard Roach SHARP Database Specialist
1:45 p.m. - 2:15 p.m.	Recruitment Methods	Ms. Claire Roach
2:15 p.m. - 3:00 p.m.	Open Forum	
3:00 p.m. - 3:15 p.m.	Break	
3:15 p.m. - 4:00 p.m.	Continued Open Forum	
4:00 p.m. - 4:30 p.m.	Conference Wrap Up/Adjourn	Lisa Williams/Claire Roach

The Agenda for the 1997 SHARP VITS

Theme: "On the Cutting Edge of Space Exploration"

Activity	Lead Person
Roll Call and Introductions (7.5 minutes)	**Ms. Deborah Glasco & MTSI**
Center Presentations (135-min.(15-min./center)*	
Introduction of NASA and SHARP Coordinators *(Coordinators state name and position)*	**Center Coordinators**
Introduction of Apprentices *(Each apprentice should introduce himself or herself by stating name, lab, and the topic of their research project only.)*	**Center Apprentices**
Presentation of one "Cutting Edge Project" *(The apprentice reporting on a "cutting edge" project should present his/her Project Statement only.)*	**Selected Apprentice**
Questions, Answers, and Remarks (7.5)	**Ms. Glasco & MTSI**

The order of center presentations:

Stennis
Marshall
Lewis
Langley
Kennedy
Johnson
Goddard
Dryden
Ames

*** Each Center will be given 15 minutes to introduce the coordinators, apprentices, and present their cutting edge project. It is imperative that the centers use the time appropriated so all Centers have time to report. We recommend that you time your presentations to ensure that you do not exceed the allotted time.**

SHARP

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SHARP ELIGIBILITY REQUIREMENTS

- Be a U.S. citizen, at least 16 years old by the time the program starts in June.
- Be a permanent resident *(in accordance with state residency requirements)* and attend a school within a 50-mile radius of the NASA Field Installation in your area.
- Be available on a full-time basis (40 hours per week) for the entire duration of the program.

APPLY TODAY! For more information on SHARP, contact your school guidance counselor or the SHARP Program Manager: Modern Technology Systems, Inc., 6801 Kenilworth Avenue, Suite 200, Riverdale, MD 20737, (301) 985-5171, Fax: (301) 985-5176, Email: sharp@mtsibase.com

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